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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/721,543	11/21/2000	Fenyong Liu	BERK-005	2657

24353 7590 04/07/2004

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EXAMINER	
NGUYEN, QUANG	

ART UNIT	PAPER NUMBER
1636	

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/721,543	LIU ET AL.	
	Examiner	Art Unit	
	Quang Nguyen, Ph.D.	1636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,6,8,10,12-16,19,23,25 and 26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *10 and 23* is/are allowed.

6)☒ Claim(s) *1, 6, 8, 12-16, 19, 25 and 26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/26/04 has been entered.

Amended claims 1, 6, 8, 10, 12-16, 19, 23 and 25-26 are pending in the present application, and they are examined on the merits herein.

Priority

If applicant desires priority under 35 U.S.C. 119 (e) based upon a previously filed application, specific reference to the earlier filed application must be made in the instant application. For benefit claims under 35 U.S.C. 120, 121 or 365(c), the reference must include the relationship (i.e., continuation, divisional, or continuation-in-part) of the applications. **This should appear as the first sentence of the specification following the title, preferably as a separate paragraph unless it appears in an application data sheet.** The status of nonprovisional parent application(s) (whether patented or abandoned) should also be included. If a parent application has become a patent, the expression "now Patent No. _____" should follow the filing date of the parent application. If a parent application has become abandoned, the expression "now abandoned" should follow the filing date of the parent application.

If the application is a utility or plant application filed under 35 U.S.C. 111(a) on or after November 29, 2000, the specific reference must be submitted during the pendency of the application and within the later of four months from the actual filing date of the application or sixteen months from the filing date of the prior application. If the application is a utility or plant application which entered the national stage from an international application filed on or after November 29, 2000, after compliance with 35 U.S.C. 371, the specific reference must be submitted during the pendency of the application and within the later of four months from the date on which the national stage commenced under 35 U.S.C. 371(b) or (f) or sixteen months from the filing date of the prior application. See 37 CFR 1.78(a)(2)(ii) and (a)(5)(ii). This time period is not extendable and a failure to submit the reference required by 35 U.S.C. 119(e) and/or 120, where applicable, within this time period is considered a waiver of any benefit of such prior application(s) under 35 U.S.C. 119(e), 120, 121 and 365(c). A priority claim filed after the required time period may be accepted if it is accompanied by a grantable petition to accept an unintentionally delayed claim for priority under 35 U.S.C. 119(e), 120, 121 and 365(c). The petition must be accompanied by (1) the reference required by 35 U.S.C. 120 or 119(e) and 37 CFR 1.78(a)(2) or (a)(5) to the prior application (unless previously submitted), (2) a surcharge under 37 CFR 1.17(t), and (3) a statement that the entire delay between the date the claim was due under 37 CFR 1.78(a)(2) or (a)(5) and the date the claim was filed was unintentional. The Director may require additional information where there is a question whether the delay was

unintentional. The petition should be addressed to: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Specification

The disclosure is objected to because in the specification on page 3, line 17, Figure 1A and not Figure 1B as amended that shows schematic representation of the evolution in vitro procedures to select RNA analogs that bind to HCMV particles.

Appropriate correction is required.

Claim Objections

Claim 8 is objected to because the term "An polynucleotide" is not grammatically correct. Appropriate correction is required.

Written Description

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Amended claim 1 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Vas-Cath Inc. v. Mahurkar, 19USPQ2d 1111 (Fed. Cir. 1991), clearly states that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention*. The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed.*" Vas-Cath Inc. v. Mahurkar, 19USPQ2d at 1117. The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." Vas-Cath Inc. v. Mahurkar, 19USPQ2d at 1116.

Applicant's invention is drawn to an anti-human cytomegalovirus RNAase resistant RNA polynucleotide ligand composition of from 15 to 100 nucleotides in length, which lacks complementary to a human cytomegalovirus genetic sequence, binds to human cytomegalovirus and inhibits human cytomegalovirus infection. The instant claim encompasses any anti-human cytomegalovirus RNAase resistant RNA polynucleotide composition of from 15 to 100 nucleotides in length (4^{15} to 4^{100} RNA polynucleotide ligand species) that binds to a human cytomegalovirus via any envelope or any capsid protein to inhibit human cyomegalovirus infection.

In analyzing whether the required written description is met for a genus claim, it is first determined whether a representative number of species have been described by their complete structures. Apart from disclosing 3 distinct RNA polynucleotide ligands L13, L19 and L66 (SEQ ID NOs 2, 12 and 36, respectively; L13 and L66 belong to the non-elected groups of sequences) selected from various distinct groups of RNA ligand sequences listed in Tables 1 & 2, that are capable of blocking human cytomegalovirus (hCMV) entry into targeted cell via their specific binding to hCMV envelope

glycoproteins gH, gB and gB, respectively, the instant specification fails to disclose a representative number of RNA polynucleotide ligands that have hCMV antiviral activity via the binding of any hCMV envelope or capsid proteins, particularly for a broad genus of RNA polynucleotide ligands of from 15 to 100 nucleotides in length. Among the elected group of sequences (SEQ ID NOs:12-16), L19 having SEQ ID NO:12 is the only RNA ligand that has been demonstrated to have hCMV anti-viral activity. It is further noted that there is no apparent correlation between the ability of an RNA polynucleotide ligand that binds to hCMV and its ability to block hCMV entry into a cell as evidenced by the teachings of the present application for the ligands L17 and L31 (see examples 1 and 2 of the instant specification). Apart from the common functional limitation of binding to a human cytomegalovirus and inhibiting human cytomegalovirus infection, the specification fails to disclose or identify the relevant structural characteristics or common essential core elements for a representative number of RNA polynucleotide ligand species possessing the desired anti-human cytomegalovirus activity, and that they are related to the elected group of SEQ ID NO:12-16, let alone for a broad genus of RNA ligand polynucleotide composition of from 15 to 100 nucleotides in length.

The claimed invention as a whole is not adequately described if the claim requires essential or critical elements which are not adequately described in the specification and which are not conventional in the art as of Applicants' filing date. Possession may be shown by actual reduction to practice, clear depiction of the invention in a detailed drawing, or by describing the invention with sufficient relevant identifying characteristics such that a person skilled in the art would recognize that the

inventor had possession of the claimed invention. Pfaff v. Wells Electronics, Inc., 48 USPQ2d 1641, 1646 (1998). With respect to the elected invention, the skilled artisan cannot envision the detailed structure of a representative number of species related to SEQ ID NOs: 12-16 having the anti-human cytomegalovirus activity other than the RNA ligand L19 (SEQ ID NO:12), and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method of isolating it. See *Fiers v. Revel*, 25 USPQ2d 1601, 1606 (Fed. Cir. 1993) and *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ2d 1016 (Fed. Cir. 1991). One cannot describe what one has not conceived. See *Fiddes v. Baird*, 30 USPQ2d 1481, 1483.

Applicant is reminded that *Vas-Cath* makes clear that the written description provision of 35 U.S.C. §112 is severable from its enablement provision (see page 1115).

Responses to Arguments

Applicants' argument related to the above rejection in the Amendment filed on 1/26/04 (pages 6-7) has been fully considered.

Applicants argue basically that Applicants have provided three separate examples of sequences in the RNA ligands L13, L19 and L66 that have anti-viral activity, and therefore the presently claimed invention meets the requirements of 35 U.S.C. 112, first paragraph.

Applicants' argument is respectfully found to be unpersuasive because the disclosure of 3 distinct RNA polynucleotide ligands L13, L19 and L66, two of which belongs to the non-elected distinct groups of sequences, that are capable of blocking human cytomegalovirus (hCMV) entry into targeted cells via their specific binding to hCMV envelope glycoproteins gH, gB and gB, respectively, is not deemed to be a representative number of species for a broad genus of RNA polynucleotide ligands of from 15 to 100 nucleotides in length that bind to human cytomegalovirus via any envelope or any capsid protein, and inhibit human cyomegalovirus infection. Moreover, the instant disclosure fails to teach clearly which structural elements present in any of the sequences of L13, L19 and L66 are essential or critical for the specific binding to hCMV gH or gB envelope glycoprotein, let alone for a broad genus of RNA polynucleotide ligands of from 15 to 100 nucleotides in length that bind to human cytomegalovirus via any envelope or any capsid protein and inhibits human cytomegalovirus infection. Furthermore, it is also noted that there is no apparent correlation between the ability of an RNA polynucleotide ligand that binds to hCMV and its ability to block hCMV entry into a cell as evidenced by the teachings of the present application for the ligands L17 and L31 (see examples 1 and 2 of the instant specification).

Accordingly, a skilled artisan cannot envision the detailed structure of a representative number of species related to the elected group of SEQ ID NOs: 12-16 having the anti-human cytomegalovirus activity other than the RNA ligand L19 (SEQ ID NO:12), and therefore conception is not achieved until reduction to practice has

occurred, regardless of the complexity or simplicity of the method. Additionally, Applicant is reminded that *Vas-Cath* makes clear that the written description provision of 35 U.S.C. §112 is severable from its enablement provision (see page 1115).

Amended claims 1, 6, 8, 12-16, 19 and 25-26 are rejected under 35 U.S.C. 112, first paragraph, because the specification, with respect to the elected invention while being enabling for an anti-human cytomegalovirus RNAase resistant RNA polynucleotide ligand composition comprising the polynucleotide sequence set forth in SEQ ID NO:12 and a method of treating human cytomegalovirus infection in a patient, said method comprising administering into said patient an anti-human cytomegalovirus RNAase resistant RNA polynucleotide ligand composition comprising the polynucleotide sequence set forth in SEQ ID NO:12 at a dose sufficient to decrease cytomegalovirus infection, and thereby treating human cytomegalovirus infection in said patient, does not reasonably provide enablement for any anti-human cytomegalovirus RNAase resistant RNA polynucleotide composition of from 15 to 100 nucleotides in length and which lacks complementarity to the human cytomegalovirus, and a method of treating human cytomegalovirus infection using the same. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

The factors to be considered in the determination of an enabling disclosure have been summarized as the quantity of experimentation necessary, the amount of direction or guidance presented, the state of the prior art, the relative skill of those in the art, the

predictability or unpredictability of the art and the breadth of the claims. *Ex parte Forman*, (230 USPQ 546 (Bd Pat. Appl & Unt, 1986); *In re Wands*, 858 F.2d 731, 8 USPQ 2d 1400 (Fed. Cir. 1988)).

When read in light of the instant specification, the polynucleotide ligands of the present invention are intended to be used as: (a) therapeutic agents for antiviral applications, and (b) for identification of new viral surface proteins that are important for infectivity, and not just for identification of any new viral surface protein (see page 25, lines 1-5). The instant specification is not enabled for the present broadly claimed invention for the following reasons.

1. The breadth of the claims

Claim 1 encompasses any anti-human cytomegalovirus RNAase resistant RNA polynucleotide composition of from 15 to 100 nucleotides in length (4^{15} to 4^{100} RNA polynucleotide ligand species) that binds to human cytomegalovirus via any envelope or any capsid protein to inhibit human cytomegalovirus infection (an antiviral activity). Claims 6, 8, 12-16, 19 and 25-26 are drawn to a polynucleotide ligand comprising the sequence set forth in any of SEQ ID NOs: 12 to 16, and a method of treating human cytomegalovirus infection by administering an RNAse resistant RNA polynucleotide ligand composition at a dose sufficient to decrease cytomegalovirus infection, wherein said polynucleotide comprises the sequence set forth in any of SEQ ID NOs:12 to 16.

2. The state and the unpredictability of the prior art

At about the effective filing date of the present application (11/24/1999), nothing was known about any anti-human cytomegalovirus RNA polynucleotide ligand

composition, which is not complementary to a human cytomegalovirus genetic sequence, binds to human cytomegalovirus and inhibits human cytomegalovirus infection or a method of treating human cytomegalovirus infection using the same (Gold et al., Annu. Rev. Biochem. 64:763-797, 1995; IDS; Wang et al., U.S. Patent 5,856,085; Cited previously; Wang et al., RNA 6:571-583, 2000; IDS). Additionally, the *in vitro* selection of potential novel RNA ligands from a pool of randomized sequences, that bind human cytomegalovirus via any envelope or any capsid protein and block the viral infection is essentially an empirical process. The unpredictability for selecting any anti-human cytomegalovirus RNA ligand has also been demonstrated by the apparent lack of a correlation between the ability of an RNA polynucleotide ligand that binds to hCMV and its ability to block hCMV entry into a cell as evidenced by the teachings of the present application for the ligands L17 and L31 (see examples 1 and 2 of the instant specification). Furthermore, the physiological art has been recognized as unpredictable (MPEP 2164.03).

3. The amount of direction or guidance provided

With respect to the elected invention, apart from the exemplification showing that the RNA polynucleotide ligand L19 having SEQ ID NO. 12 (which is identical to SEQ ID NO:13) that is capable of blocking human cytomegalovirus (hCMV) entry into targeted cell via its specific binding to hCMV envelope gB glycoprotein, the instant specification fails to provide sufficient guidance for a skilled artisan on how to attain any other RNA ligand sequences related to L19 or sequences having SEQ ID NOs. 14-16 to have anti-human cytomegalovirus activity or binding property to cytomegaloviral surface

proteins that are important for infectivity. This is no evidence of record indicating that the polynucleotide ligands having SEQ ID NOs. 14-16 possess any antiviral activity or that they are capable of binding to any cytomegaloviral surface proteins that are important for infectivity, let alone for possessing a distinct epitope from that of L19. Although L49 (SEQ ID NO. 16) has extensive homology with L11 (SEQ ID NO. 14) and L58 (SEQ ID NO. 15), and that all of these RNA ligands can bind to hCMV viral particles, it is unclear whether these ligands are also capable of blocking hCMV entry into a cell by binding to any of the cytomegaloviral envelope or capsid glycoproteins that are important for infectivity. This is because there is no apparent correlation between the ability of an RNA polynucleotide ligand that binds to hCMV and its ability to block hCMV entry into a cell as evidenced by the teachings of the present application for the ligands L17 and L31 (see examples 1 and 2 of the instant specification). The instant specification also fails to teach which critical feature(s) or core structure(s) possessed by L19 having SEQ ID NO:12 that are responsible for its anti-human cytomegalovirus activity or its binding to a viral protein involved in cytomegalovirus infection. As such, how could a skilled artisan in the art be able **to make and use** RNA ligands having SEQ ID NOs: 14-16 or any RNA ligand species within the elected group of sequences as claimed. As already noted above, it is apparent that such anti-human cytomegalovirus activity has to be determined empirically, and that there is no way to predict which nucleotide modification (addition, deletion, substitution) at which nucleotide position and in which combinations with respect to SEQ ID NO:12, such that one skilled in the art would obtain RNA ligand variants possessing desired anti-human cytomegalovirus

activity. Given the lack of sufficient guidance provided by the present disclosure, it would have required undue experimentation for a skilled artisan to make and use the instant broadly claimed invention. Please note that enablement requires the specification teaches how to **make and use** the claimed invention.

As set forth in *In re Fisher*, 166 USPQ 18 (CCPA 1970), compliance with 35 USC 112, first paragraph requires:

> That scope of claims must bear a reasonable correlation to scope of enablement provided by specification to persons of ordinary skill in the are; in cases involving predictable factors, such as mechanical or electrical elements, a single embodiment provides broad enablement in the sense that, once imagined, other embodiments can be made without difficulty and their performance characteristics predicted by resort to known scientific laws; in cases involving unpredictable factors, such as most chemical reactions and physiological activity, scope of enablement varies inversely with degree of unpredictability of factors involved.

Additionally, with respect to the breadth of the instant claims, Applicants' attention is further directed to the decision in *In re Shokal*, 113 USPQ 283 (CCPA 1957) wherein is stated:

> It appears to be well settled that a single species can rarely, if ever, afford sufficient support for a generic claim. In re Soll, 25 C.C.P.A. (Patents) 1309, 97 F.2d 623, 38 USPQ 189; In re Wahlforss et al., 28 C.C.P.A. (Patents) 867, 117 F.2d 270, 48 USPQ 397. The decisions do not however fix any definite number of species which will establish completion of a generic invention and it seems evident therefrom that such number will vary, depending on the circumstances of particular cases. Thus, in the case of small genus such as the halogens, consisting of four species, a reduction to practice of three, or perhaps even two, might serve to complete the generic invention, while in the case of a genus comprising hundreds of species, a considerably larger number of reductions to practice would probably be necessary.

The courts have also stated that reasonable correlation must exist between scope of exclusive right to patent application and scope of enablement set forth in the patent application (27 USPQ2d 1662 *Ex parte Maizel.*).

Accordingly, due to the lack of sufficient guidance provided by the specification regarding to the issues set forth above, the unpredictability of the physiological art as well as the unpredictability for selecting novel RNA ligands from a pool of randomized

sequences, that bind human cytomegalovirus and block the viral infection, and the breadth of the claims, it would have required undue experimentation for one skilled in the art to make and use the instant broadly claimed invention.

Responses to Arguments

Applicants' arguments related to the above rejection in the Amendment filed on 1/26/04 (pages 7-8) have been fully considered, but they are not found persuasive.

1. Applicants argue that the sequences of SEQ ID NO:12-16 meet the requirements of 35 U.S.C. 112 as evidenced by the statements "In our study, the selected ligands exhibited a high affinity to hCMV particles and were highly effective in inhibiting viral production" and "the binding affinity of the ligands also appeared to correlate with their activity in inhibiting viral infection". Applicants further argue that the ligands cited by Examiner that lack antiviral activity are unrelated to the presently claimed invention because the presently claimed sequences share specific sequence motifs, e.g., the terminal TGGG sequence, and the internal motif purine-CCC(AT/TA) as well as other similarities, and therefore these sequences should also have antiviral activity.

Please note that the cited statement "the binding affinity of the ligands also **APPEARED** to correlate with their activity in inhibiting viral infection". Additionally, there is no objective evidence of record indicating or suggesting that the terminal TGGG sequence, the internal motif purine-CCC(AT/TA) are essential for the binding of the L19 ligand to the hCMV glycoprotein gB that blocks effectively hCMV entry into targeted

cells. Although the ligands L17 and L31 do not fall within the elected group of RNA polynucleotide ligand sequences, they demonstrate clearly that simply binding to hCMV does not necessarily lead to the inhibition of hCMV entry into targeted cells. This supports the Examiner's position that the anti-hCMV activity has to be detemined empirically, and that there is no way to predict which nucleotide modification (addition, deletion, substitution) at which nucleotide position and in which combination(s) to the ligand L19 having SEQ ID NO:12 would or would not result in the RNA polyncleotide ligand variants possessing the desired anti-hCMV activity.

2. Applicants also argue that the polynucleotides of the invention find use in identifying viral glycoproteins in addition to the function of blocking viral infection, and that identification of new viral essential glycoproteins will further our understanding of HCMV infection and provide novel targets for drug development.

Please note that when read in light of the instant specification, the polynucleotides of the present invention are taught to be used as: (a) therapeutic agents for antiviral applications, and (b) for identification of new viral surface proteins that are important for infectivity, and not just for identification of any new viral surface protein (see page 25, lines 1-5). Claims 1, 12-16, 19, 23 and 25-26 are clearly drawn to the use of the polynucleotides as therapeutic agents in treating human cytomegalovirus infection; while the polynucleotides recited in claims 6, 8 and 10 can be used for identification of new viral surface proteins that are important for infectivity. The instant specification fails to provide sufficient guidance for a skilled artisan on how to make and use polynucleotides other than SEQ ID NO:12 (identical to SEQ ID NO:13) for

identifying cytomegaloviral proteins important for infectivity or for therapeutic purposes for the reasons already set forth in the above reasons.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6, 13-14 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 recites the limitation "said RNA". There is insufficient antecedent basis for this limitation in the claim. This is because there is no previous recitation of RNA in claim 8 from which claim 6 is dependent.

In claim 13 and its dependent claim 14, it is unclear what is encompassed by the phrase "wherein said polynucleotide ligand composition comprises two or more distinct sequences". Do Applicants intend to claim a composition that contains a polynucleotide ligand having two or more distinct sequences (e.g., SEQ ID NO:12 to SEQ ID NO:16) or a composition contains two or more polynucleotide ligands having distinct sequences of SEQ ID NO:12 to SEQ ID NO:16? The metes and bounds of the claims are not clearly determined. Clarification is requested.

Claim 16 recites the limitation "said antiviral polynucleotide". There is insufficient antecedent basis for this limitation in the claim. This is because there is no previous recitation of antiviral polynucleotide in claim 15 from which claim 16 is dependent.

Conclusions

Claims 10 and 23 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang Nguyen, Ph.D., whose telephone number is (571) 272-0776.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's mentor, David Guzo, Ph.D., may be reached at (571) 272-0767, or SPE, Irem Yucel, Ph.D., at (571) 272-0781.

To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 1636; Central Fax No. (703) 872-9306.

Quang Nguyen, Ph.D.

DAVID GUZO
PRIMARY EXAMINER